

Abstract

A hybrid bioreactor for cell culture is disclosed. To simultaneously apply compressive strain for cell differentiation and shear strain for cell proliferation to cells, the hybrid bioreactor includes a plurality of reactor tube assemblies (100), a compressive strain motor (5), a shear strain motor (25), a lower anchor mount (20) having a plurality of toothed anchors (70) to respectively anchor the lower ends of the reactor tube assemblies (100) to the lower anchor mount (20), a ball screw (90) operated in conjunction with the compressive strain motor (5), an upper anchor mount (60) which engages with the ball screw (90) to vertically move upward and downward and having a plurality of compressive strain anchors (80) to anchor the upper ends of the reactor tube assemblies (100) to the upper anchor mount (60), a power transmission unit to transmit the rotating force of the shear strain motor (25) to the toothed anchors (70).